

Types of organic reactions

Reaction type	Definition	example
substitution	an atom (or group) in a molecule is replaced by another	Br ₂ with an alkane in light and taking 10 mins; producing HBr and bromoalkane
addition	one molecule adds onto another molecule	Br ₂ with an alkene: producing 1,2-dibromoalkene
dehydration	the loss of water from a molecule during a reaction	reaction of an alcohol with conc H ₂ SO ₄ to produce an alkene
hydrolysis (a type of addition reaction)	a reaction with water	alkene with water to form an alcohol
hydrogenation (a type of addition reaction)	the addition of hydrogen atoms across a carbon atom to carbon atom double bond	alkene with hydrogen to form an alkane
bromination (a type of addition reaction)	the addition of bromine atoms across a carbon atom to carbon atom double bond	Br ₂ and alkene produces 1,2-dibromoalkane
oxidation (a type of addition reaction)	a half reaction that involves a loss of electrons or an increase in oxidation number	primary alcohol reacting with acidified KMnO ₄ purple → colourless or acidified K ₂ Cr ₂ O ₇ orange → green) to form a carboxylic acid